

## SEQUENCE LISTING

## (1) GENERAL INFORMATION:

- (i) APPLICANT: Hu, Sylvia
- (ii) TITLE OF INVENTION: Truncated Glial Cell Line-Derived Neurotrophic Factor
- (iii) NUMBER OF SEQUENCES: 50
- (iv) CORRESPONDENCE ADDRESS:
  - (A) ADDRESSEE: AMGEN INC.
  - (B) STREET: 1840 DeHavilland Drive
  - (C) CITY: Thousand Oaks
  - (D) STATE: California
  - (E) COUNTRY: United States of America
  - (F) ZIP: 91320
- (v) COMPUTER READABLE FORM:
  - (A) MEDIUM TYPE: Floppy disk
  - (B) COMPUTER: IBM PC compatible
  - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
  - (D) SOFTWARE: PatentIn Release #1.0, Version #1.25
- (vi) CURRENT APPLICATION DATA:
  - (A) APPLICATION NUMBER:
  - (B) FILING DATE:
  - (C) CLASSIFICATION:
- (viii) ATTORNEY/AGENT INFORMATION:
  - (A) NAME: Curry, Daniel R.
  - (B) REGISTRATION NUMBER: 32,727
  - (C) REFERENCE/DOCKET NUMBER: A-357
- (ix) TELECOMMUNICATION INFORMATION:
  - (A) TELEPHONE: 805-447-8102
  - (B) TELEFAX: 805-499-8011
  - (C) TELEX:

## (2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 402 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (ix) FEATURE:
  - (A) NAME/KEY: CDS
  - (B) LOCATION: 1..402

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

TCA CCA GAT AAA CAA ATG GCA GTG CTT CCT AGA AGA GAG CGG AAT CGG	48
Ser Pro Asp Lys Gln Met Ala Val Leu Pro Arg Arg Glu Arg Asn Arg	
1 5 10 15	
CAG GCT GCA GCT GCC AAC CCA GAG AAT TCC AGA GGA AAA GGT CGG AGA	96
Gln Ala Ala Ala Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg	
20 25 30	
GGC CAG AGG GGC AAA AAC CGG GGT TGT GTC TTA ACT GCA ATA CAT TTA	144
Gly Gln Arg Gly Lys Asn Arg Gly Cys Val Leu Thr Ala Ile His Leu	
35 40 45	
AAT GTC ACT GAC TTG GGT CTG GGC TAT GAA ACC AAG GAG GAA CTG ATT	192
Asn Val Thr Asp Leu Gly Leu Gly Tyr Glu Thr Lys Glu Glu Leu Ile	
50 55 60	
TTT AGG TAC TGC AGC GGC TCT TGC GAT GCA GCT GAG ACA ACG TAC GAC	240
Phe Arg Tyr Cys Ser Gly Ser Cys Asp Ala Ala Glu Thr Thr Tyr Asp	
65 70 75 80	
AAA ATA TTG AAA AAC TTA TCC AGA AAT AGA AGG CTG GTG AGT GAC AAA	288
Lys Ile Leu Lys Asn Leu Ser Arg Asn Arg Arg Leu Val Ser Asp Lys	
85 90 95	
GTA GGG CAG GCA TGT TGC AGA CCC ATC GCC TTT GAT GAT GAC CTG TCG	336
Val Gly Gln Ala Cys Cys Arg Pro Ile Ala Phe Asp Asp Asp Leu Ser	
100 105 110	
TTT TTA GAT GAT AAC CTG GTT TAC CAT ATT CTA AGA AAG CAT TCC GCT	384
Phe Leu Asp Asp Asn Leu Val Tyr His Ile Leu Arg Lys His Ser Ala	
115 120 125	
AAA AGG TGT GGA TGT ATC	402
Lys Arg Cys Gly Cys Ile	
130	

## (2) INFORMATION FOR SEQ ID NO:2:

## (i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 134 amino acids
- (B) TYPE: amino acid
- (C) TOPOLOGY: linear

## (ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

Ser Pro Asp Lys Gln Met Ala Val Leu Pro Arg Arg Glu Arg Asn Arg	
1 5 10 15	
Gln Ala Ala Ala Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg	
20 25 30	
Gly Gln Arg Gly Lys Asn Arg Gly Cys Val Leu Thr Ala Ile His Leu	
35 40 45	

Asn Val Thr Asp Leu Gly Leu Gly Tyr Glu Thr Lys Glu Glu Leu Ile  
50 55 60

Phe Arg Tyr Cys Ser Gly Ser Cys Asp Ala Ala Glu Thr Thr Tyr Asp  
65 70 75 80

Lys Ile Leu Lys Asn Leu Ser Arg Asn Arg Arg Leu Val Ser Asp Lys  
85 90 95

Val Gly Gln Ala Cys Cys Arg Pro Ile Ala Phe Asp Asp Asp Leu Ser  
100 105 110

Phe Leu Asp Asp Asn Leu Val Tyr His Ile Leu Arg Lys His Ser Ala  
115 120 125

Lys Arg Cys Gly Cys Ile  
130

## (2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 4 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

Lys Asn Arg Gly  
1

## (2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 5 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

Gly Lys Asn Arg Gly  
1 5

## (2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 6 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

Arg Gly Lys Asn Arg Gly  
1 5

(2) INFORMATION FOR SEQ ID NO:6:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 7 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

Gln Arg Gly Lys Asn Arg Gly  
1 5

(2) INFORMATION FOR SEQ ID NO:7:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 8 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

Gly Gln Arg Gly Lys Asn Arg Gly  
1 5

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 9 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

Arg Gly Gln Arg Gly Lys Asn Arg Gly  
1 5

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 10 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly  
1 5 10

(2) INFORMATION FOR SEQ ID NO:10:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 11 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:10:

Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly  
1 5 10

(2) INFORMATION FOR SEQ ID NO:11:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 12 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:11:

Lys Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly  
1 5 10

(2) INFORMATION FOR SEQ ID NO:12:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 13 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:12:

Gly Lys Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly  
1 5 10

## (2) INFORMATION FOR SEQ ID NO:13:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 14 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:13:

Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly  
1 5 10

## (2) INFORMATION FOR SEQ ID NO:14:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 15 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:14:

Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly  
1 5 10 15

## (2) INFORMATION FOR SEQ ID NO:15:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 16 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:15:

Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly  
1 5 10 15

## (2) INFORMATION FOR SEQ ID NO:16:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 17 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:16:

Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg  
1 5 10 15  
Gly

(2) INFORMATION FOR SEQ ID NO:17:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 18 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:17:

Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly Lys Asn  
1 5 10 15  
Arg Gly

(2) INFORMATION FOR SEQ ID NO:18:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 19 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:18:

Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly Lys  
1 5 10 15  
Asn Arg Gly

(2) INFORMATION FOR SEQ ID NO:19:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 20 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:19:

Ala Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly  
1 5 10 15  
Lys Asn Arg Gly  
20

## (2) INFORMATION FOR SEQ ID NO:20:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 21 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:20:

Ala Ala Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg  
1 5 10 15  
Gly Lys Asn Arg Gly  
20

## (2) INFORMATION FOR SEQ ID NO:21:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 22 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:21:

Ala Ala Ala Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln  
1 5 10 15  
Arg Gly Lys Asn Arg Gly  
20

## (2) INFORMATION FOR SEQ ID NO:22:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 23 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:22:

Ala Ala Ala Ala Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly  
1 5 10 15

Gln Arg Gly Lys Asn Arg Gly  
20

(2) INFORMATION FOR SEQ ID NO:23:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 24 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:23:

Gln Ala Ala Ala Ala Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg  
1 5 10 15

Gly Gln Arg Gly Lys Asn Arg Gly  
20

(2) INFORMATION FOR SEQ ID NO:24:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 25 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:24:

Arg Gln Ala Ala Ala Ala Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg  
1 5 10 15

Arg Gly Gln Arg Gly Lys Asn Arg Gly  
20 25

(2) INFORMATION FOR SEQ ID NO:25:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 26 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:25:

Asn Arg Gln Ala Ala Ala Asn Pro Glu Asn Ser Arg Gly Lys Gly  
1 5 10 15

Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly  
20 25

(2) INFORMATION FOR SEQ ID NO:26:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 27 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:26:

Arg Asn Arg Gln Ala Ala Ala Asn Pro Glu Asn Ser Arg Gly Lys  
1 5 10 15

Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly  
20 25

(2) INFORMATION FOR SEQ ID NO:27:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 28 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:27:

Glu Arg Asn Arg Gln Ala Ala Ala Asn Pro Glu Asn Ser Arg Gly  
1 5 10 15

Lys Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly  
20 25

(2) INFORMATION FOR SEQ ID NO:28:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 29 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:28:

Arg Glu Arg Asn Arg Gln Ala Ala Ala Asn Pro Glu Asn Ser Arg  
1 5 10 15

Gly Lys Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly  
20 25

(2) INFORMATION FOR SEQ ID NO:29:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 30 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:29:

Arg Arg Glu Arg Asn Arg Gln Ala Ala Ala Ala Asn Pro Glu Asn Ser  
1 5 10 15

Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly  
20 25 30

(2) INFORMATION FOR SEQ ID NO:30:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 31 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:30:

Pro Arg Arg Glu Arg Asn Arg Gln Ala Ala Ala Ala Asn Pro Glu Asn  
1 5 10 15

Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly  
20 25 30

(2) INFORMATION FOR SEQ ID NO:31:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 32 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:31:

Leu Pro Arg Arg Glu Arg Asn Arg Gln Ala Ala Ala Ala Asn Pro Glu  
1 5 10 15

Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg Gly  
20 25 30

## (2) INFORMATION FOR SEQ ID NO:32:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 33 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:32:

Val Leu Pro Arg Arg Glu Arg Asn Arg Gln Ala Ala Ala Ala Asn Pro  
1 5 10 15

Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly Lys Asn Arg  
20 25 30

Gly

## (2) INFORMATION FOR SEQ ID NO:33:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 34 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:33:

Ala Val Leu Pro Arg Arg Glu Arg Asn Arg Gln Ala Ala Ala Ala Asn  
1 5 10 15

Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly Lys Asn  
20 25 30

Arg Gly

## (2) INFORMATION FOR SEQ ID NO:34:

(i) SEQUENCE CHARACTERISTICS:  
(A) LENGTH: 35 amino acids  
(B) TYPE: amino acid  
(C) STRANDEDNESS: single  
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:34:

Met Ala Val Leu Pro Arg Arg Glu Arg Asn Arg Gln Ala Ala Ala Ala  
1 5 10 15  
Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly Lys  
20 25 30  
Asn Arg Gly  
35

## (2) INFORMATION FOR SEQ ID NO:35:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 36 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:35:

Gln Met Ala Val Leu Pro Arg Arg Glu Arg Asn Arg Gln Ala Ala Ala  
1 5 10 15  
Ala Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly  
20 25 30  
Lys Asn Arg Gly  
35

## (2) INFORMATION FOR SEQ ID NO:36:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 37 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:36:

Lys Gln Met Ala Val Leu Pro Arg Arg Glu Arg Asn Arg Gln Ala Ala  
1 5 10 15  
Ala Ala Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg  
20 25 30  
Gly Lys Asn Arg Gly  
35

## (2) INFORMATION FOR SEQ ID NO:37:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 38 amino acids

- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:37:

Asp Lys Gln Met Ala Val Leu Pro Arg Arg Glu Arg Asn Arg Gln Ala  
1 5 10 15  
Ala Ala Ala Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln  
20 25 30  
Arg Gly Lys Asn Arg Gly  
35

(2) INFORMATION FOR SEQ ID NO:38:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 39 amino acids
  - (B) TYPE: amino acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: peptide

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:38:

Pro Asp Lys Gln Met Ala Val Leu Pro Arg Arg Glu Arg Asn Arg Gln  
1 5 10 15  
Ala Ala Ala Ala Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly  
20 25 30  
Gln Arg Gly Lys Asn Arg Gly  
35

(2) INFORMATION FOR SEQ ID NO:39:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 417 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:39:

CATATGTCTC CGGATAAACAA AATGGCTGTT CTTCCACGTC GTGAACGTAA CCGTCAGGCG 60  
GCCGCTGCTA ACCCGGAGAA TTCCCGTGGT AAAGGTCGTC GTGGTCAGCG TGTTAAAAAC 120  
CGCGGTTGCG TTCTGACCGC TATCCACCTG AACGTTACCG ACCTGGGTCT CGGTTACGAA 180  
ACCAAAGAAG AATTAATCTT CCGTTACTGC TCCGGTTCCCT GCGACGCTGC TGAAACCACG 240

TACGACAAAAA TCCTGAAAAAA CCTGTCCCGT AACCGTCGTC TGGTTCCGA CAAAGTTGGT 300  
 CAAGCTTGCT GCCGTCCGAT CGCTTTCGAC GACGACCTGT CCTTCCTGGA CGACAACCTG 360  
 GTTTACCACA TCCTGCGTAA ACACTCCGCT AAGCGTTGCG GTTGCATCTA AGGATCC 417

## (2) INFORMATION FOR SEQ ID NO:40:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 417 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: DNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:40:

CATATGAGCC CGGACAAACA GATGGCAGTA CTTCCACGTC GTGAACGTAA TCGCCAGGCA 60  
 GCAGCTGCAA ACCCGGAAAAA CTCCCGTGGT AAAGGTCGCC GTGGCCAGCG CGGCAAAAC 120  
 CGTGGTTGTG TTCTGACTGC AATCCACCTG AACGTTACTG ACCTGGGTCT GGGCTACGAA 180  
 ACCAAAGAAG AACTGATCTT CCGCTACTGC AGCGGCTCTT GCGACGCAGC TGAAACCACT 240  
 TACGACAAAAA TCCTGAAAAAA CCTGTCCCGT AACCGCCGTC TGGTAAGCGA CAAAGTAGGT 300  
 CAGGCATGCT GCCGTCCGAT CGCATTGAC GATGACCTGA GCTTCCTGGA TGACAACCTG 360  
 GTTTACCACA TCCTGCGTAA ACACTCCGCT AAACGCTGCG GTTGCATCTA AGGATCC 417

## (2) INFORMATION FOR SEQ ID NO:41:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 345 base pairs
  - (B) TYPE: nucleic acid
  - (C) STRANDEDNESS: single
  - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 1..342

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:41:

ATG TCC CCA GAA AAT TCT CGT GGT AAA GGT CGT CGT GGT CAG CGT GGT	48
Met Ser Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly	
135 140 145 150	
AAT AAC CGC GGT TGC GTT CTG ACC GCT ATC CAC CTG AAC GTT ACC GAC	96
Asn Asn Arg Gly Cys Val Leu Thr Ala Ile His Leu Asn Val Thr Asp	
155 160 165	

CTG GGT CTC GGT TAC GAA ACC AAA GAA GAA TTA ATC TTC CGT TAC TGC	144		
Leu Gly Leu Gly Tyr Glu Thr Lys Glu Glu Leu Ile Phe Arg Tyr Cys			
170	175	180	
TCC GGT TCC TGC GAC GCT GCT GAA ACC ACG TAC GAC AAA ATC CTG AAA	192		
Ser Gly Ser Cys Asp Ala Ala Glu Thr Thr Tyr Asp Lys Ile Leu Lys			
185	190	195	
AAC CTG TCC CGT AAC CGT CGT CTG GTT TCC GAC AAA GTT GGT CAA GCT	240		
Asn Leu Ser Arg Asn Arg Arg Leu Val Ser Asp Lys Val Gly Gln Ala			
200	205	210	
TGC TGC CGT CCG ATC GCT TTC GAC GAC GAC CTG TCC TTC CTG GAC GAC	288		
Cys Cys Arg Pro Ile Ala Phe Asp Asp Asp Leu Ser Phe Leu Asp Asp			
215	220	225	230
AAC CTG GTT TAC CAC ATC CTG CGT AAA CAC TCC GCT AAG CGT TGC GGT	336		
Asn Leu Val Tyr His Ile Leu Arg Lys His Ser Ala Lys Arg Cys Gly			
235	240	245	
TGC ATC TAA	345		
Cys Ile			

(2) INFORMATION FOR SEQ ID NO:42:

- (i) SEQUENCE CHARACTERISTICS:
  - (A) LENGTH: 114 amino acids
  - (B) TYPE: amino acid
  - (D) TOPOLOGY: linear
- ii) MOLECULE TYPE: protein
- xi) SEQUENCE DESCRIPTION: SEQ ID NO:42:

## (2) INFORMATION FOR SEQ ID NO:43:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 315 base pairs  
 (B) TYPE: nucleic acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(ix) FEATURE:

(A) NAME/KEY: CDS  
 (B) LOCATION: 1..312

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:43:

ATG	CGT	GGT	CAA	CGT	GGT	AAA	AAC	CGC	GGT	TGC	GTT	CTG	ACT	GCA	ATC	48
Met	Arg	Gly	Gln	Arg	Gly	Lys	Asn	Arg	Gly	Cys	Val	Leu	Thr	Ala	Ile	
115											125				130	
CAC	CTG	AAC	GTT	ACT	GAC	CTG	GGT	CTG	GGC	TAC	GAA	ACC	AAA	GAA	GAA	96
His	Leu	Asn	Val	Thr	Asp	Leu	Gly	Leu	Gly	Tyr	Glu	Thr	Lys	Glu	Glu	
						135			140					145		
CTG	ATC	TTC	CGC	TAC	TGC	AGC	GGC	TCT	TGC	GAC	GCA	GCT	GAA	ACC	ACT	144
Leu	Ile	Phe	Arg	Tyr	Cys	Ser	Gly	Ser	Cys	Asp	Ala	Ala	Glu	Thr	Thr	
						150			155					160		
TAC	GAC	AAA	ATC	CTG	AAA	AAC	CTG	TCC	CGT	AAC	CGC	CGT	CTG	GTA	AGC	192
Tyr	Asp	Lys	Ile	Leu	Lys	Asn	Leu	Ser	Arg	Asn	Arg	Arg	Leu	Val	Ser	
						165			170					175		
GAC	AAA	GTA	GGT	CAG	GCA	TGC	TGC	CGT	CCG	ATC	GCA	TTC	GAC	GAT	GAC	240
Asp	Lys	Val	Gly	Gln	Ala	Cys	Cys	Arg	Pro	Ile	Ala	Phe	Asp	Asp	Asp	
						180			185					190		
CTG	AGC	TTC	CTG	GAT	GAC	AAC	CTG	GTT	TAC	CAC	ATC	CTG	CGT	AAA	CAC	288
Leu	Ser	Phe	Leu	Asp	Asp	Asn	Leu	Val	Tyr	His	Ile	Leu	Arg	Lys	His	
						195			200			205		210		
TCC	GCT	AAA	CGC	TGC	GGT	TGC	ATC	TAA								315
Ser	Ala	Lys	Arg	Cys	Gly	Cys	Ile									
						215										

## (2) INFORMATION FOR SEQ ID NO:44:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 104 amino acids  
 (B) TYPE: amino acid  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:44:

Met	Arg	Gly	Gln	Arg	Gly	Lys	Asn	Arg	Gly	Cys	Val	Leu	Thr	Ala	Ile	
1						5			10					15		

His Leu Asn Val Thr Asp Leu Gly Leu Gly Tyr Glu Thr Lys Glu Glu  
 20 25 30

Leu Ile Phe Arg Tyr Cys Ser Gly Ser Cys Asp Ala Ala Glu Thr Thr  
 35 40 45

Tyr Asp Lys Ile Leu Lys Asn Leu Ser Arg Asn Arg Arg Leu Val Ser  
 50 55 60

Asp Lys Val Gly Gln Ala Cys Cys Arg Pro Ile Ala Phe Asp Asp Asp  
 65 70 75 80

Leu Ser Phe Leu Asp Asp Asn Leu Val Tyr His Ile Leu Arg Lys His  
 85 90 95

Ser Ala Lys Arg Cys Gly Cys Ile  
 100

## (2) INFORMATION FOR SEQ ID NO:45:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 312 base pairs
- (B) TYPE: nucleic acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(ix) FEATURE:

- (A) NAME/KEY: CDS
- (B) LOCATION: 1..309

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:45:

ATG GGT CAA CGT GGT AAA AAC CGT GGT TGT GTT CTG ACT GCA ATC CAC 48  
 Met Gly Gln Arg Gly Lys Asn Arg Gly Cys Val Leu Thr Ala Ile His  
 105 110 115 120

CTG AAC GTT ACT GAC CTG GGT CTG GGC TAC GAA ACC AAA GAA GAA CTG 96  
 Leu Asn Val Thr Asp Leu Gly Leu Gly Tyr Glu Thr Lys Glu Glu Leu  
 125 130 135

ATC TTC CGC TAC TGC AGC GGC TCT TGC GAC GCA GCT GAA ACC ACT TAC 144  
 Ile Phe Arg Tyr Cys Ser Gly Ser Cys Asp Ala Ala Glu Thr Thr Tyr  
 140 145 150

GAC AAA ATC CTG AAA AAC CTG TCC CGT AAC CGC CGT CTG GTA AGC GAC 192  
 Asp Lys Ile Leu Lys Asn Leu Ser Arg Asn Arg Arg Leu Val Ser Asp  
 155 160 165

AAA GTA GGT CAG GCA TGC TGC CGT CCG ATC GCA TTC GAC GAT GAC CTG 240  
 Lys Val Gly Gln Ala Cys Cys Arg Pro Ile Ala Phe Asp Asp Asp Leu  
 170 175 180

AGC TTC CTG GAT GAC AAC CTG GTT TAC CAC ATC CTG CGT AAA CAC TCC 288  
 Ser Phe Leu Asp Asp Asn Leu Val Tyr His Ile Leu Arg Lys His Ser  
 185 190 195 200

GCT AAA CGC TGC GGT TGC ATC TAA  
 Ala Lys Arg Cys Gly Cys Ile  
 205

312

## (2) INFORMATION FOR SEQ ID NO:46:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 103 amino acids  
 (B) TYPE: amino acid  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:46:

Met Gly Gln Arg Gly Lys Asn Arg Gly Cys Val Leu Thr Ala Ile His  
 1 5 10 15

Leu Asn Val Thr Asp Leu Gly Leu Gly Tyr Glu Thr Lys Glu Glu Leu  
 20 25 30

Ile Phe Arg Tyr Cys Ser Gly Ser Cys Asp Ala Ala Glu Thr Thr Tyr  
 35 40 45

Asp Lys Ile Leu Lys Asn Leu Ser Arg Asn Arg Arg Leu Val Ser Asp  
 50 55 60

Lys Val Gly Gln Ala Cys Cys Arg Pro Ile Ala Phe Asp Asp Asp Leu  
 65 70 75 80

Ser Phe Leu Asp Asp Asn Leu Val Tyr His Ile Leu Arg Lys His Ser  
 85 90 95

Ala Lys Arg Cys Gly Cys Ile  
 100

## (2) INFORMATION FOR SEQ ID NO:47:

(i) SEQUENCE CHARACTERISTICS:  
 (A) LENGTH: 135 amino acids  
 (B) TYPE: amino acid  
 (C) STRANDEDNESS: single  
 (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:47:

Met Ser Pro Asp Lys Gln Met Ala Val Leu Pro Arg Arg Glu Arg Asn  
 1 5 10 15

Arg Gln Ala Ala Ala Ala Asn Pro Glu Asn Ser Arg Gly Lys Gly Arg  
 20 25 30

Arg Gly Gln Arg Gly Lys Asn Arg Gly Cys Val Leu Thr Ala Ile His  
 35 40 45

Leu Asn Val Thr Asp Leu Gly Leu Gly Tyr Glu Thr Lys Glu Glu Leu  
 50 55 60

Ile Phe Arg Tyr Cys Ser Gly Ser Cys Asp Ala Ala Glu Thr Thr Tyr  
 65 70 75 80

Asp Lys Ile Leu Lys Asn Leu Ser Arg Asn Arg Arg Leu Val Ser Asp  
 85 90 95

Lys Val Gly Gln Ala Cys Cys Arg Pro Ile Ala Phe Asp Asp Asp Leu  
 100 105 110

Ser Phe Leu Asp Asp Asn Leu Val Tyr His Ile Leu Arg Lys His Ser  
 115 120 125

Ala Lys Arg Cys Gly Cys Ile  
 130 135

## (2) INFORMATION FOR SEQ ID NO:48:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 104 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

## (xi) SEQUENCE DESCRIPTION: SEQ ID NO:48:

Met Arg Gly Gln Arg Gly Lys Asn Arg Gly Cys Val Leu Thr Ala Ile  
 1 5 10 15

His Leu Asn Val Thr Asp Leu Gly Leu Gly Tyr Glu Thr Lys Glu Glu  
 20 25 30

Leu Ile Phe Arg Tyr Cys Ser Gly Ser Cys Asp Ala Ala Glu Thr Thr  
 35 40 45

Tyr Asp Lys Ile Leu Lys Asn Leu Ser Arg Asn Arg Arg Leu Val Ser  
 50 55 60

Asp Lys Val Gly Gln Ala Cys Cys Arg Pro Ile Ala Phe Asp Asp Asp  
 65 70 75 80

Leu Ser Phe Leu Asp Asp Asn Leu Val Tyr His Ile Leu Arg Lys His  
 85 90 95

Ser Ala Lys Arg Cys Gly Cys Ile  
 100

## (2) INFORMATION FOR SEQ ID NO:49:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 103 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:49:

Met Gly Gln Arg Gly Lys Asn Arg Gly Cys Val Leu Thr Ala Ile His  
1 5 10 15

Leu Asn Val Thr Asp Leu Gly Leu Gly Tyr Glu Thr Lys Glu Glu Leu  
20 25 30

Ile Phe Arg Tyr Cys Ser Gly Ser Cys Asp Ala Ala Glu Thr Thr Tyr  
35 40 45

Asp Lys Ile Leu Lys Asn Leu Ser Arg Asn Arg Arg Leu Val Ser Asp  
50 55 60

Lys Val Gly Gln Ala Cys Cys Arg Pro Ile Ala Phe Asp Asp Asp Leu  
65 70 75 80

Ser Phe Leu Asp Asp Asn Leu Val Tyr His Ile Leu Arg Lys His Ser  
85 90 95

Ala Lys Arg Cys Gly Cys Ile  
100

(2) INFORMATION FOR SEQ ID NO:50:

(i) SEQUENCE CHARACTERISTICS:

- (A) LENGTH: 114 amino acids
- (B) TYPE: amino acid
- (C) STRANDEDNESS: single
- (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:50:

Met Ser Pro Glu Asn Ser Arg Gly Lys Gly Arg Arg Gly Gln Arg Gly  
1 5 10 15

Asn Asn Arg Gly Cys Val Leu Thr Ala Ile His Leu Asn Val Thr Asp  
20 25 30

Leu Gly Leu Gly Tyr Glu Thr Lys Glu Glu Leu Ile Phe Arg Tyr Cys  
35 40 45

Ser Gly Ser Cys Asp Ala Ala Glu Thr Thr Tyr Asp Lys Ile Leu Lys  
50 55 60

Asn Leu Ser Arg Asn Arg Arg Leu Val Ser Asp Lys Val Gly Gln Ala  
65 70 75 80

Cys Cys Arg Pro Ile Ala Phe Asp Asp Asp Leu Ser Phe Leu Asp Asp  
85 90 95

Asn	Leu	Val	Tyr	His	Ile	Leu	Arg	Lys	His	Ser	Ala	Lys	Arg	Cys	Gly
100								105						110	

Cys Ile

On the other hand, the *lateral* and *anterior* regions of the brain are not so well developed.